



Montana Fish, Wildlife & Parks

Notice of Decision

Removal of Non-native Fishes with Rotenone and Restoration of Westslope Cutthroat Trout to Camas Lake and Big Camas Creek

March 4, 2014

Project Proposal and Justification:

The westslope cutthroat trout (westslope cutthroat trout -*Oncorhynchus clarkii lewisi*) is ranked as S2 (imperiled because of rarity or because of other factors demonstrably making it very vulnerable to extinction throughout its range) by the Natural Heritage Network and the State of Montana. Genetically pure westslope cutthroat trout occupy about 8% of their historical range in the western United States and less than 4% of their historical range in northcentral Montana within the Missouri River Drainage.

Major threats to westslope cutthroat trout include competition and hybridization with non-native rainbow trout, competition with brook trout, and isolation of remaining pure populations above barriers in short headwater sections of stream. The smallest isolated populations are at risk of extinction from catastrophic events (e.g. fire, drought) and may eventually suffer negative consequences of genetic inbreeding.

Montana Fish, Wildlife & Parks (FWP) is proposing a project to restore native westslope cutthroat trout to upper Big Camas Creek and Camas Lake (see attached map). Restoration would require the removal of non-native fishes with an Environmental Protection Agency piscicide containing rotenone. Detoxification of rotenone would occur on national forest lands approximately 0.75 miles upstream from private lands (see attached map). No other westslope cutthroat restoration projects are planned for the Camas Creek Drainage. Historically, Camas Creek and its tributaries would have supported westslope cutthroat trout (westslope) in approximately 43 miles of stream. Currently, the only remaining population of non-hybridized westslope in the Camas drainage is located in Middle Fork Camas Creek (see attached map). This population is the result of a transfer of genetically pure westslope from a population in the Castle Mountains (2002 and 2003).

Trout populations in the Camas Creek drainage are typically highly hybridized individuals – a mix of old westslope genetics, stocked Yellowstone cutthroat trout, and stocked rainbow trout.

Westslope cutthroat trout currently occupy 13 miles of the 740 miles of historically occupied stream in the Smith Drainage (2% of historical). Currently, approximately 3.5 miles of upper Big Camas Creek and Camas Reservoir supports Yellowstone cutthroat trout (YCT - *Oncorhynchus clarkii bouvieri*). The YCT population in Camas Lake and Big Camas Creek is the result of at least two stocking events; 11,700 fish in 1938 and 15,000 fish in 1940. Two fish barriers (waterfalls) approximately 0.75 miles upstream of the Helena National Forest boundary separate the upstream YCT population from downstream populations of hybridized westslope cutthroat trout and brook trout.

Projects which restore westslope to historically occupied habitats are necessary to prevent extinction of the only trout native to the Smith River. Efforts to stabilize and increase westslope populations would likely prevent a future listing under the Endangered Species Act and the potential for unwanted/unnecessary land use restrictions on public and private lands

This project is intended to restore a viable population of locally obtained (Castle Mountains Populations) westslope to approximately 3.5 miles of Big Camas Creek and the 29-acre – ft. Camas Lake. Predicted project benefits include:

- Increase in total miles of native non-hybridized westslope inhabited stream in the Camas Drainage from 1 to 3.5 miles (400% increase).
- Replication of one of the last 3 genetically pure populations of westslope in the Smith River drainage.
- Reduction in the risk of potential listing under the Endangered Species Act – and a reduction in risks associated with regulatory authority under listing.

Montana Fish, Wildlife & Parks propose the following mitigation for the temporary decrease in trout numbers after removal of non-native Yellowstone cutthroat trout:

- The current harvest limit for Yellowstone cutthroat trout in Camas Lake is 5 daily and 10 in possession. We propose no change in harvest regulations after Camas Lake is restored to a native westslope cutthroat trout fishery (5 per day and 10 in possession).
- Annual stocking of catchable sterile (triploid) westslope cutthroat trout until naturally reproducing fishery has developed.
- Pursue unlimited harvest of YCT in Camas Lake and Big Camas Creek in project area prior to non-native fish removals.
- Treatment would be conducted after Fourth of July weekend and prior to the opening of archery season.

Environmental and Social Impacts of Project:

Rotenone is a naturally occurring substance derived from the roots of several tropical and sub-tropical plants in the bean family. All piscicides kill through biochemical processes at the cellular level which make it impossible for the fish to use oxygen absorbed in the blood and needed in the release of energy during cellular respiration. Rotenone naturally degrades within 1- 8 weeks through hydrolysis and exposure to sunlight (likely less than two weeks in this application). To help ensure that aquatic life and water quality downstream of Big Camas Creek would not be affected, rotenone would be neutralized with potassium permanganate shortly after it passes two natural waterfall barriers. The detoxification site is approximately 0.75 mile upstream from the nearest private property. FWP expects the impacts to non target invertebrates within the project area to be minimal with ample source areas for re-colonization of gill breathing invertebrates lost during the treatment. FWP also expects minimal impacts to amphibians and reptiles as a result of this project by implementing the project when larval life stages are less likely to be present in the area. FWP expects this project to have little or no adverse effects on mammals or birds that use the area. Ample research has shown that rotenone is not toxic to mammals and birds at the fish killing concentrations that will be used for this project. This project is also not likely to cause displacement of local populations of birds or mammals. FWP and USFS personnel presence on Big Camas Creek and Camas Lake will be necessary for approximately one week (one day of treatment with higher numbers of personnel). The risk that rotenone will enter and be mobile in groundwater is minimal. Tests have shown that rotenone does not transport through sediments. Although there are no domestic wells located within the project area, water users downstream on Big Camas Creek were notified of this project. FWP will follow the manufacturer's label recommendations that advise using sentinel fish to ensure the product has adequately degraded prior to re-stocking of cutthroat trout or cessation of potassium permanganate detoxification. Risks to applicators are substantially greater than risks to the general public because of the necessity of handling the compounds at full strength. Measures to reduce risks to applicators include training in the proper handling of piscicides, and the use of safety equipment listed on the product labels such as respirators, goggles, and gloves. At least one, and most likely several, Montana Department of Agriculture certified pesticide applicator(s) would supervise and administer the project. Detoxification of rotenone would involve the use of potassium permanganate at the downstream end of the project area – 0.75 miles upstream of the USFS boundary. Rotenone and potassium permanganate would be transported, handled, applied, and stored according to the label specifications to reduce the probability of human exposure or spill. Health risk to project personnel will be minimized through the use of proper planning, preparation, and the use of personal protective gear.

Public Involvement:

In compliance with the Montana Environmental Policy Act, an Environmental Assessment (EA) was prepared and circulated for public comment from June 21 to July 21, 2013. A scoping letter, which included a project summary and area

map was mailed to landowners bordering Big Camas Creek 10 miles downstream of the treatment area - local landowners, conservation groups, non-governmental, and government organizations were also informed with the scoping letter. Copies of the EA were made available at the State Library in Helena, the FWP Region 4 Headquarters in Great Falls, and the FWP internet web site. One phone call was received from a resident of East Helena, the gentleman was concerned that the project would impact downstream brook trout fisheries – FWP personnel assured the angler that downstream brook trout would not be affected by the proposed project. Three comment letters were received during and after the official comment period. The first comment letter did not include substantive comments but was against the proposed project. The second letter was from a concerned citizen who had fished Camas Lake for many years – the landowner was opposed to the project based on costs and little discernible difference between the two species. FWP personnel spoke with the gentleman and described the proposed project; its funding, mostly pre-obligated monies, and the genetic differences between WCT and YCT. The conversation was pleasant and informative. The third comment letter was from the Meagher County Board of Commissioners. After receiving the letter a meeting between Meagher County Commissioners was held on August 20, 2013. FWP and USFS personnel attended the meeting. The Commissioners recommended a public meeting be held because of public interest and questions related to the project – see final response page 6. The following are responses to that letter.

Meagher County Commissioners comment letter made on 7/9/13 (Excerpts from comment letter in bolded text):

At this time we have a number of concerns with the proposed restoration. The largest concern is the cost to implement the proposed project. We feel that the money would be better spent in different areas such as controlling the spread of noxious weeds on the thousands of acres owned by the Fish Wild Life & Parks and the National Forest

Response: Budgets associated with fisheries and native fish restoration in particular will be used for the proposed project. These funds must be spent on restoration or fisheries related projects. Equipment and personnel costs for the proposed project are part of existing duties of FWP personnel unrelated to range management or noxious weeds

Other Concerns include the recreational impact to Meagher County. Visitors from all walks of life are drawn to Meagher County for the great fishing and outdoor opportunities we have here. We feel that if the fish are destroyed in the Camas Lake area that this may detour anglers and other outdoorsman from planning their activities in our area and would have an economic impact to our small town.

Response: As noted in mitigation measures, we expect a reduced fishery shortly after the treatment in Camas Lake and Big Camas Creek. We propose

stocking sterile triploid westslope immediately after removal of non-native fishes and clearing of residual rotenone. Catchable sized sterile westslope will be stocked along with smaller sized fish. These stocked fish should grow rapidly and provide a harvestable fishery in Camas Lake the year after treatment. We have also proposed as mitigation no changes in harvest from current regulations (5 trout in Camas Lake). Also, there are several other lakes in the immediate vicinity that would provide an alternate trout fishery during the treatment (e.g. Gipsy, Boulder, and Edith lakes).

Also we are concerned about the environmental impact to the farmers and rancher downstream from Camas Lake, and if the proposed use of the chemical rotenone will have any adverse effects to cattle watering in the Camas Lake drainage.

Response: The lower bound of the treatment area is approximately 0.75 stream mile from the nearest private property. Rotenone typically degrades rapidly through physical breakdown, photolysis, and natural oxidation in streams and shallow lakes. Rotenone passing the lower bounds of the treatment area would likely degrade natural prior to reaching private lands. The proposed treatment includes active detoxification of rotenone with potassium permanganate. Detoxification efforts will continue until all rotenone has cleared from Camas Lake and Big Camas Creek. FWP and the USFS will work closely with lessees' to minimize impacts to livestock operations. Moreover, FWP personnel will limit time in the Camas Drainage to the minimum required for the treatment with rotenone. As stated in the Environmental Assessment, rotenone is not harmful to animals at the proposed treatment concentrations (.050 ppb active rotenone). The following language from the Environmental Assessment describes the effect of rotenone on mammals:

Mammals are generally not affected because they neutralize rotenone by enzymatic action in their stomach and intestines (AFS 2002). Laboratory tests by Marking (1988) involved feeding a form of rotenone to rats and dogs as part of their diet for periods of six months to two years and observed effects such as diarrhea, decreased food consumption, and weight loss. He reported that despite unusually high treatment concentrations of rotenone in rats and dogs, it did not cause tumors or reproductive problems in mammals. Studies of risk for terrestrial animals found that a 22 pound dog would have to drink 7,915 gallons of treated lake water within 24 hours, or eat 660,000 pounds of rotenone-killed fish, to receive a lethal dose (CDFG 1994). The State of Washington reported that a half pound mammal would need to consume 12.5 mg of pure rotenone to receive a lethal dose (Bradbury 1986). Considering the only conceivable way an animal can consume the compound under field conditions is by drinking lake or stream water, a half-pound animal would need to drink 33 gallons of water treated at 2 ppm.

The EPA (2007) made the following conclusion for small mammals and large mammals;

*When estimating daily food intake, an intermediate-sized 350 g mammal will consume about 18.8 g of food. Using data previously cited from the common carp with a body weight of 88 grams, a small mammal would only consume 21% (18.8/88) of the total carp body mass. According to the data for common carp, total body residues of rotenone in carp amounted to 1.08 µg/g. A 350-g mammal consuming 18.8 grams represents an equivalent dose of 20.3 µg of rotenone; this value is well below the median lethal dose of rotenone (39.5 mg/kg * 0.350 kg = 13.8 mg = 13,800 µg) for similarly sized mammals. When assessing a large mammal, 1000 g is considered to be a default body weight. A 1000 g mammal will consume about 34 g of food. If the animal fed exclusively on carp killed by rotenone, the equivalent dose would be 34 g * 1.08 µg/g or 37 µg of rotenone. This value is below the estimated median lethal equivalent concentration adjusted for body weight (30.4 mg/kg * 1 kg = 30.4 mg = 30,400 µg). Although fish are often collected and buried to the extent possible following a rotenone treatment, even if fish were available for consumption by mammals scavenging along the shoreline for dead or dying fish, it is unlikely that piscivorous mammals will consume enough fish to result in observable acute toxicity.*

In light of these concerns, we oppose the restoration and we formally request that you schedule and conduct a public meeting to thoroughly review and determine if you should proceed with this project. We appreciate your time and look forward to discussing this matter further to address the concern of the Meagher County Commissioners and the residents of Meagher County


Response: A public meeting was held at the White Sulphur Springs Senior Center on February 27 2014. A brief presentation of the proposed project was presented. After the presentation a question and answer session was held. Thirteen members of the public attended the meeting. Public representatives included local ranchers and anglers. Questions fielded during the meeting included, Endangered Species Act implications, assurances that the proposed transfer would work, safety of the proposed EPA registered piscicide, concerns related to fishing opportunities, reasoning behind selecting Camas Lake and Big Camas Creek as a restoration site, fitness of westslope cutthroat trout, history of the Yellowstone cutthroat trout population in Camas Lake, the Candidate Conservation Agreement w Assurances, communication issues between the USFS and FWP and local ranchers, and potential impacts to downstream populations of brook trout and hybridized WCT.

During the meeting, discussion also revolved around stocking efforts by local landowners many years ago. FWP committed to making sure the new native population was a success and requested help from anybody that was interested in future transfer efforts. The meeting was very helpful in clarifying for the public the reasoning behind the project. The consensus at the end of the meeting was overall positive in nature. FWP representatives welcomed further communication on the project and maintaining an open dialogue as the project progresses.

the reasoning behind the project. The consensus at the end of the meeting was overall positive in nature. FWP representatives welcomed further communication on the project and maintaining an open dialogue as the project progresses. Dave Moser (project lead) volunteered that anybody wishing to discuss the project was welcome to call at any time (406-454-5855)

Decision:

Based on the Environmental Assessment, public comment, and the current high risk of extinction of genetically pure westslope cutthroat trout in the Smith River drainage, it is my decision to proceed with Alternative 2, the proposed action. Alternative 2 involves removal of fish populations of non-native Yellowstone cutthroat trout, hybrid trout, and re-establishment of a pure strain population of westslope cutthroat trout. The Draft Supplemental Environmental Assessment, together with this Decision Notice, will serve as the final document for this proposal. This alternative provides the best opportunity to benefit the conservation and restoration of westslope cutthroat trout, helps relieve ESA listing pressure and also serves to illustrate the State's commitment to perpetuating native fish species. This project will help preserve westslope cutthroat trout in the Smith River drainage by replicating one of the few remaining populations of westslope cutthroat trout and expanding the overall range of westslope cutthroat trout by an additional 3.5 miles. I find there to be no significant impact on the human or physical environment associated with this project, except to help ensure the long-term persistence of pure, locally adapted westslope cutthroat trout in the Smith River drainage. Therefore I conclude the Environmental Assessment is the appropriate level of analysis, and that an Environmental Impact Statement is not required.


Gary Bertellotti
Region 4 Supervisor
Great Falls, Montana

Date: 3/4/2014

